REMARKS

The Examiner has requested election between Group I (containing claims 1-8 and 14-23) and Group II (containing claims 9-13). The Applicant elects Group I without traverse.

The Applicant has amended the claims to provide proper antecedent references for various terms used in the claims. The Applicant has also amended claim 9 so that claims 9-11 now depend from claim 6. The applicant submits that amended claims 9 through 11 should be included in Group I. New claims 24 to 26 have been added. The Applicant submits that these claims add no new subject matter (the subject matter of claims 24-25 is shown in Figure 1, claim 26 recites features originally included in claims 12-13). Claims 24-26 also belong in Group I (since they depend from claim 5).

The Applicant looks forward to receiving further action on this application.

Respectfully submitted,

By: ______________________

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MARKED UP VERSION SHOWING CHANGES

Claims

1. (Once Amended) A method for controlling an actuator, said method comprising manipulating [the] a forced resonant frequency of [the] a plunger of said actuator.

2. (Once Amended) A method for controlling an actuator, said method comprising maintaining [the] a forced resonant frequency of [the] a plunger of said actuator at a substantially constant value over a fractional actuation range.

3. (Once Amended) A method for controlling an actuator, said method comprising maintaining [the] a forced resonant frequency of [the] a plunger of said actuator substantially constant at a maximum maintainable value over a fractional actuation range.

4. (Once Amended) A method for controlling an actuator, said method comprising maintaining [the] a forced resonant frequency of [the] a plunger of said actuator substantially at [the] a value of [the] a natural mechanical resonant frequency of said plunger, said forced resonant frequency being maintained at the value of said natural mechanical resonant frequency over [the] an actuation range.

5. (Once Amended) A method for controlling an actuator over an actuation range, said method comprising :
   [a.] employing an actuating impetus that is non-linear with displacement ;
   [b.] using displacement as the only measured feedback signal ; and,
   [c.] keeping [the] a forced resonant frequency of [the] a plunger of the actuator substantially constant under actuation.

6. (Once Amended) A method as in claim 5, wherein said [plunger] actuating impetus is controlled by a software control algorithm.

7. (Once Amended) A method as in claim 5, wherein said forced resonant frequency is kept substantially at a constant value over a fractional actuation range, said constant value being substantially equal to [the] a maximum attainable oscillation frequency of said plunger under actuation over said fractional range.

8. (Once Amended) A method as in claim 5, wherein said [constant value of said] forced resonant frequency is maintained substantially equal to [the] a natural mechanical resonant frequency of said plunger.

9. (Once Amended) A method as in claim 6 [for controlling an electrostatic actuator over an actuation range, said method] comprising
   [a. employing an actuating impetus that is non-linear with displacement
   b. using displacement as the only measured feedback signal
   c. controlling the plunger via a software control algorithm
   d.] imposing a constant actuation gradient on said actuator as long as [the] a desired actuating signal to said actuator is constant.

10. (Once Amended) A method as in claim 9, wherein the forced resonant frequency is [kept at a substantially constant value over a fractional actuation range, said constant value being] substantially equal to [the] a maximum attainable oscillation frequency of said plunger under actuation over [said] a fractional actuation range.

11. (Once Amended) A method as in claim 9 wherein said forced resonant frequency is substantially equal to [the] a natural resonant frequency of said plunger.

14. (Once Amended) A method for controlling an actuator over an actuation range, said method comprising
   [a.] [actuation of] actuating the plunger of said actuator using one of electromagnetic and electrostatic force to provide an actuating force [and] ;
   [b.] [measurement of only] measuring [the] a plunger displacement as a feedback signal; [and]
   [c.] obtaining a first calibration relationship of plunger displacement as a function of activating impetus ; [and]
   [d.] obtaining a second calibration relationship of [the] an actuation gradient as a function of the plunger displacement, said actuation gradient being chosen to impose a constant forced resonant frequency on said plunger at each displacement ; and ,
   [e.] keeping said forced resonant frequency of said plunger substantially constant over said actuation range.

16. (Once Amended) A method as in any of [the above] claims 1 to 11 or 14 wherein said actuator is a microelectromechanical actuator.

17. (Once Amended) A method as in claim 2, wherein said fractional actuation range includes at least a portion of [the] a snap-down region of said actuator.

18. (Once Amended) A method as in claim 3, wherein said fractional actuation range includes at least a portion of [the] a snap-down region of said actuator.

19. (Once Amended) A method as in claim 4, wherein said fractional actuation range includes at least a portion of [the] a snap-down region of said actuator.

20. (Once Amended) A method as in claim 5, wherein said fractional actuation range includes at least a portion of [the] a snap-down region of said actuator.

21. (Once Amended) A method as in claim 9, wherein said fractional actuation range includes at least a portion of [the] a snap-down region of said actuator.

22. (Once Amended) A method as in claim 14, wherein said fractional actuation range includes at least a portion of [the] a snap-down region of said actuator.

23. (Once Amended) A method as in claim 16, wherein said fractional actuation range includes at least a portion of [the] a snap-down region of said actuator.